

## ABSTRACT

**[00107]** For an incremental redundancy (IR) transmission in a MIMO system, a transmitter processes (e.g., encodes, partitions, interleaves, and modulates) a data packet based on a selected rate to obtain multiple data symbol blocks. The transmitter transmits one data symbol block at a time until a receiver correctly recovers the data packet or all blocks are transmitted. Whenever a data symbol block is received from the transmitter, the receiver detects a received symbol block to obtain a detected symbol block, processes (e.g., demodulates, deinterleaves, re-assembles, and decodes) all detected symbol blocks obtained for the data packet, and provides a decoded packet. If the decoded packet is in error, then the receiver repeats the processing when another data symbol block is received for the data packet. The receiver may also perform iterative detection and decoding on the received symbol blocks for the data packet multiple times to obtain the decoded packet.